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1600

TECH CENTER 1600/2900

RAW SEQUENCE LISTING

DATE: 11/14/2001

PATENT APPLICATION: US/09/627,165B

TIME: 09:00:25

Input Set : A:\CRFascidoc.txt3.txt

Output Set: N:\CRF3\11142001\I627165B.raw

3 <110> APPLICANT: KIM, Jong-Bae
 5 <120> TITLE OF INVENTION: CRUDE EXTRACT FROM Viscum album coloratum, AND PROTEINS
 6 AND LECTINS ISOLATED THEREFROM
 8 <130> FILE REFERENCE: Korean Mistletoe Lectin
 10 <140> CURRENT APPLICATION NUMBER: 09/627,165B
 11 <141> CURRENT FILING DATE: 2000-07-27
 13 <160> NUMBER OF SEQ ID NOS: 16
 15 <210> SEQ ID NO: 1
 16 <211> LENGTH: 762
 17 <212> TYPE: DNA
 18 <213> ORGANISM: Viscum album coloratum
 20 <220> FEATURE:
 22 <221> NAME/KEY: misc_feature
 24 <400> SEQUENCE: 1
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 26 atcacgcttc tccgagatta tgtctcaagc ggaagctttt ccaatgagat accactcttg 120
 27 cgtcagtccta cgatccccgt ctccggatgcg caaagatttg tgttggtgga actcaccaat 180
 28 cagggggggag actcgatcac ggccgcccac gacgttacta acctgtacgt ggtggcttac 240
 29 caagcaggcg accaatecta ctttttgccg gacgcaccag acggcgcgga aaggcatctc 300
 30 ttcaccggca ccaccagatc ctccctccca ttcaccggaa gctacacaga tctggagcga 360
 31 ttccgcccgtc atagggacca gatccctctg ggtagagagg aactcattca atccgtctcg 420
 32 gcccttcggtt ttccgggcag caacactcgt gcccaagctc gttcctttat catcctcatt 480
 33 cagatgatct cccaggccgc cagattcaat cccatcttat ggagggtctg ccaatacatt 540
 34 agcagtgggg ggtcatttct gccagacacg tacattctcc agctggagac gagttggggg 600
 35 caacaatcca cgcaagttca gcaactcgac gatggcggtt ttaataaccc aattcggttg 660
 36 actatatcca ctggtgtctt cgtgacgttg agcaatgttc gcgacgtgat cgccagctta 720
 37 gcgatcatgt tgtttgtatg cgaggaccgg ccattcttct ct 762
 40 <210> SEQ ID NO: 2
 41 <211> LENGTH: 254
 42 <212> TYPE: PRT
 43 <213> ORGANISM: Viscum album coloratum
 45 <220> FEATURE:
 47 <221> NAME/KEY: misc_feature
 50 <400> SEQUENCE: 2
 51 Tyr Glu Arg Leu Arg Leu Arg Val Thr His Gln Thr Thr Gly Asp Glu
 52 1 5 10 15
 54 Tyr Phe Arg Phe Ile Thr Leu Leu Arg Asp Tyr Val Ser Ser Gly Ser
 55 20 25 30
 57 Phe Ser Asn Glu Ile Pro Leu Leu Arg Gln Ser Thr Ile Pro Val Ser
 58 35 40 45
 60 Asp Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Gly Gly Asp
 61 50 55 60
 63 Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Leu Tyr Val Val Ala Tyr
 64 65 70 75 80
 66 Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Asp Gly Ala
 67 85 90 95
 69 Glu Arg His Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro Phe Thr

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Input Set : A:\CRFascidoc.txt3.txt

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70          100          105          110
72 Gly Ser Tyr Thr Asp Leu Glu Arg Phe Ala Gly His Arg Asp Gln Ile
73          115          120          125
75 Pro Leu Gly Arg Glu Glu Leu Ile Gln Ser Val Ser Ala Leu Arg Phe
76          130          135          140
78 Pro Gly Ser Asn Thr Arg Ala Gln Ala Arg Ser Phe Ile Ile Leu Ile
79 145          150          155          160
81 Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg Ala
82          165          170          175
84 Arg Gln Tyr Ile Ser Ser Gly Gly Ser Phe Leu Pro Asp Thr Tyr Ile
85          180          185          190
87 Leu Gln Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln His
88          195          200          205
90 Ser Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Thr Ile Ser Thr
91          210          215          220
93 Gly Val Phe Val Thr Leu Ser Asn Val Arg Asp Val Ile Ala Ser Leu
94 225          230          235          240
96 Ala Ile Met Leu Phe Val Cys Glu Asp Arg Pro Ser Ser Ser
97          245          250
100 <210> SEQ ID NO: 3
101 <211> LENGTH: 762
102 <212> TYPE: DNA
103 <213> ORGANISM: Viscum album coloratum
105 <220> FEATURE:
107 <221> NAME/KEY: misc_feature
109 <400> SEQUENCE: 3
110 tacgagaggc taagactcag agttacgcat caaaccacgg gcgaccaata tttcaagttc 60
111 atcacgcttc tccgagatca tgtctcaagc ggaagcttgt ccaatcaaat accactcttg 120
112 cggcagtcta ctgtcccgct ctcggatacg cagagatttg tggtggtgga actcagcaat 180
113 cagggggggag actcgatcac ggccgcacac gacgttacca atctgtacgt ggtggcttac 240
114 caagcaggca accaatccta ctttttgccg gacgcacctc gcggcgcgga aacgtatctc 300
115 ttcaccggca ccaccgcatc ctctctccca ttcaacggaa gctaccctga tctggagcga 360
116 tacgccggac atagggacca gatccctctc ggtatagacc aactcattca atccgtctcg 420
117 gcccttcggt ttccgggcag caaacactcg gcccaagctc gttcctttat catcctcatt 480
118 cagatgatct ccgaggccgc cagattcaat cccatcttat ggagggctcg ccaatacatt 540
119 agcagtgggg ggtcatttct gccagacacg tacattctcc agctggagac gagttggggg 600
120 caacaatcca cgcaagttca gcaactcgac gatggcggtt ttaataaacc aattcggttg 660
121 actatatcca ctggtgtctt cgtgacgttg agcaatgttc gcgacgtgat cgccagcyta 720
122 gcgatcatgt tgtttgatg cgaggaccgg ccatcttctt ct 762
125 <210> SEQ ID NO: 4
126 <211> LENGTH: 254
127 <212> TYPE: PRT
128 <213> ORGANISM: Viscum album coloratum
130 <220> FEATURE:
132 <221> NAME/KEY: misc_feature
133 <222> LOCATION: 240
134 <223> OTHER INFORMATION: Xaa = any amino acid
136 <400> SEQUENCE: 4
137 Tyr Glu Arg Leu Arg Leu Arg Val Thr His Gln Thr Thr Gly Asp Gln

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138   1                               5                               10                               15
140 Tyr Phe Lys Phe Ile Thr Leu Leu Arg Asp His Val Ser Ser Gly Ser
141                               20                               25                               30
143 Leu Ser Asn Gln Ile Pro Leu Leu Arg Gln Ser Thr Val Pro Val Ser
144                               35                               40                               45
146 Asp Thr Gln Arg Phe Val Leu Val Glu Leu Ser Asn Gln Gly Gly Asp
147                               50                               55                               60
149 Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Leu Tyr Val Val Ala Tyr
150   65                               70                               75                               80
152 Gln Ala Gly Asn Gln Ser Tyr Phe Leu Arg Asp Ala Pro Arg Gly Ala
153                               85                               90                               95
155 Glu Thr Tyr Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro Phe Asn
156                               100                              105                              110
158 Gly Ser Tyr Pro Asp Leu Glu Arg Tyr Ala Gly His Arg Asp Gln Ile
159                               115                              120                              125
161 Pro Leu Gly Ile Asp Gln Leu Ile Gln Ser Val Ser Ala Leu Arg Phe
162   130                              135                              140
164 Pro Gly Ser Asn Thr Arg Ala Gln Ala Arg Ser Phe Ile Ile Leu Ile
165 145                              150                              155                              160
167 Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp Arg Ala
168                               165                              170                              175
170 Arg Gln Tyr Ile Ser Ser Gly Gly Ser Phe Leu Pro Asp Thr Tyr Ile
171                               180                              185                              190
173 Leu Gln Leu Glu Thr Ser Trp Gly Gln Gln Ser Thr Gln Val Gln His
174   195                              200                              205
176 Ser Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Thr Ile Ser Thr
177   210                              215                              220
W--> 179 Gly Val Phe Val Thr Leu Ser Asn Val Arg Asp Val Ile Ala Ser Xaa
180 225                              230                              235                              240
182 Ala Ile Met Leu Phe Val Cys Glu Asp Arg Pro Ser Ser Ser
183                               245                              250
186 <210> SEQ ID NO: 5
187 <211> LENGTH: 768
188 <212> TYPE: DNA
189 <213> ORGANISM: Viscum album coloratum
191 <220> FEATURE:
193 <221> NAME/KEY: misc_feature
195 <400> SEQUENCE: 5
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197 atcaagcttc tccgagactc tgtctcaagc ggaagctttt ccaatgacat accgctcctg 120
198 cctccgtcaa tcccggcttc ctctgcgcag agatttgtgt tgggtggaact cacaaatcag 180
199 ttgggaaagt gggaagactc gatcacggcc gccatcgacg ttaccaatct gtacgtggtg 240
200 gcttaccaag caggcgacca atcctacttt ttgcgcgacg caccagacgg cgcggaaagg 300
201 catctcttca ccggcaccac cagatcctct ctctctttca acggaagcta cgctgatctg 360
202 gagcggtacg ccggacatag ggaccggatc cctctgggta gagagccact catacgatcc 420
203 gtctcggcgc ttgattatcc cggcggcagc acgcgcgccc aagccagttc cattattatc 480
204 gtcattcaga tgatctccga ggcgccaga ttcaatccca tcctatggag ggctcgccaa 540
205 tacattaaca gtggggtgtc atatcttcca gacgtgtaca tgctggagct ggaggcgagt 600
206 tggggccaac aatcgaccca agtccagcag tcgaccgatg gcgtttttaa taaccaatt 660

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207 cggttgaggta tatccaccgg caacttcgtg tgggttgagca atgttcgcga cgtgatcgcc 720
208 agcttgggga tcatgggtgtt tgtatgcagg gaccgggtcat cttccccc 768
211 <210> SEQ ID NO: 6
212 <211> LENGTH: 256
213 <212> TYPE: PRT
214 <213> ORGANISM: Viscum album coloratum
216 <220> FEATURE:
218 <221> NAME/KEY: misc_feature
220 <400> SEQUENCE: 6
221 Tyr Glu Arg Leu Arg Val Thr His Gln Thr Thr Gly Asp Glu
222 1 5 10 15
224 Tyr Phe Arg Phe Ile Lys Leu Leu Arg Asp Ser Val Ser Ser Gly Ser
225 20 25 30
227 Phe Ser Asn Asp Ile Pro Leu Leu Pro Pro Ser Ile Pro Val Ser Ser
228 35 40 45
230 Ala Gln Arg Phe Val Leu Val Glu Leu Thr Asn Gln Leu Gly Lys Trp
231 50 55 60
233 Glu Asp Ser Ile Thr Ala Ala Ile Asp Val Thr Asn Leu Tyr Val Val
234 65 70 75 80
236 Ala Tyr Gln Ala Gly Asp Gln Ser Tyr Phe Leu Arg Asp Ala Pro Asp
237 85 90 95
239 Gly Ala Glu Arg His Leu Phe Thr Gly Thr Thr Arg Ser Ser Leu Pro
240 100 105 110
242 Phe Asn Gly Ser Tyr Ala Asp Leu Glu Arg Tyr Ala Gly His Arg Asp
243 115 120 125
245 Arg Ile Pro Leu Gly Arg Glu Pro Leu Ile Arg Ser Val Ser Ala Leu
246 130 135 140
248 Asp Tyr Pro Gly Gly Ser Thr Arg Ala Gln Ala Ser Ser Ile Ile Ile
249 145 150 155 160
251 Val Ile Gln Met Ile Ser Glu Ala Ala Arg Phe Asn Pro Ile Leu Trp
252 165 170 175
254 Arg Ala Arg Gln Tyr Ile Asn Ser Gly Val Ser Tyr Leu Pro Asp Val
255 180 185 190
257 Tyr Met Leu Glu Leu Glu Ala Ser Trp Gly Gln Gln Ser Thr Gln Val
258 195 200 205
260 Gln Gln Ser Thr Asp Gly Val Phe Asn Asn Pro Ile Arg Leu Gly Ile
261 210 215 220
263 Ser Thr Gly Asn Phe Val Trp Leu Ser Asn Val Arg Asp Val Ile Ala
264 225 230 235 240
266 Ser Leu Gly Ile Met Val Phe Val Cys Arg Asp Arg Ser Ser Ser Pro
267 245 250 255
270 <210> SEQ ID NO: 7
271 <211> LENGTH: 797
272 <212> TYPE: DNA
273 <213> ORGANISM: Viscum album coloratum
275 <220> FEATURE:
277 <221> NAME/KEY: misc_feature
279 <400> SEQUENCE: 7
280 acgatgtaac ctgcactact tccgaaccta cggtacgggtt tgtgggtcga aatggcctgt 60

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DATE: 11/14/2001

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TIME: 09:00:25

Input Set : A:\CRFascidoc.txt3.txt

Output Set: N:\CRF3\11142001\I627165B.raw

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281 gtctcgacgt cccagagggc gattaccacg atggaagtcg gatacagttg tggccctgca 120
282 agtccaactc cgatcagaat cagctgtgga cgatcagaag ggatggaacc attcgatcta 180
283 atggaaggtg cttgacgacc tatgggtata ctgcgggcag ctatataatg atctacgact 240
284 gtaatagagg ggggtgggac cttactactt ggcagataag gggcaatgga atcatcctta 300
285 atccaagatc catgatggtg atcggaacac catccgggag ccgcggaacc cgtggcacta 360
286 cttttactct gcaaacactg ggttactcat taggacaggg ctggcttgcc agcaatgata 420
287 ccgctoctcg cgaggtaacc atatatggtt tccgcgatca ttgcatgga actagtggag 480
288 ggaaagtgtg ggttgggact tgtgtgagtg gcaagcagaa ccaaagatgg gctttgtacg 540
289 gggatggttc cattcgcccc aaaccttacc aagaccaatg cctcacctct cagggagact 600
290 ccgttagatc cgtaatcaat ttatttagct gcaccgctgg atcgccaagg caacgatggg 660
291 tattttacca taaaggggcc attttgaatt taaagaatag gttggccatg gatgtggcgg 720
292 aatcaaatac aagcctccgc cgaataatca tcttttcagt cactggaaat ccaaatacaa 780
293 tgtggcttcc cgtgccca                                     797
296 <210> SEQ ID NO: 8
297 <211> LENGTH: 266
298 <212> TYPE: PRT
299 <213> ORGANISM: Viscum album coloratum
301 <220> FEATURE:
303 <221> NAME/KEY: misc_feature
305 <400> SEQUENCE: 8
306 Asp Asp Val Thr Cys Thr Thr Ser Glu Pro Thr Val Arg Phe Val Gly
307   1                               5               10           15
309 Arg Asn Gly Leu Cys Leu Asp Val Pro Glu Gly Asp Tyr His Asp Gly
310                20               25           30
312 Ser Arg Ile Gln Leu Trp Pro Cys Lys Ser Asn Ser Asp Gln Asn Gln
313           35               40           45
315 Leu Trp Thr Ile Arg Arg Asp Gly Thr Ile Arg Ser Asn Gly Arg Cys
316           50               55           60
318 Leu Thr Thr Tyr Gly Tyr Thr Ala Gly Ser Tyr Ile Met Ile Tyr Asp
319   65               70               75           80
321 Cys Asn Arg Gly Gly Trp Asp Leu Thr Thr Trp Gln Ile Arg Gly Asn
322           85               90           95
324 Gly Ile Ile Leu Asn Pro Arg Ser Met Met Val Ile Gly Thr Pro Ser
325           100              105           110
327 Gly Ser Arg Gly Thr Arg Gly Thr Thr Phe Thr Leu Gln Thr Leu Gly
328           115              120           125
330 Tyr Ser Leu Gly Gln Gly Trp Leu Ala Ser Asn Asp Thr Ala Pro Arg
331           130              135           140
333 Glu Val Thr Ile Tyr Gly Phe Arg Asp His Cys Met Glu Thr Ser Gly
334  145              150              155           160
336 Gly Lys Val Trp Val Gly Thr Cys Val Ser Gly Lys Gln Asn Gln Arg
337           165              170           175
339 Trp Ala Leu Tyr Gly Asp Gly Ser Ile Arg Pro Lys Pro Tyr Gln Asp
340           180              185           190
342 Gln Cys Leu Thr Ser Gln Gly Asp Ser Val Arg Ser Val Ile Asn Leu
343           195              200           205
345 Phe Ser Cys Thr Ala Gly Ser Pro Arg Gln Arg Trp Val Phe Thr Asn
346           210              215           220
348 Lys Gly Ala Ile Leu Asn Leu Lys Asn Arg Leu Ala Met Asp Val Ala

```

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY

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DATE: 11/14/2001
TIME: 09:00:26

Input Set : A:\CRFascidoc.txt3.txt

Output Set: N:\CRF3\11142001\I627165B.raw

L:179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:514 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:548 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:554 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:558 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:574 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:583 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:592 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14